

Ames hosts Congressional Subcommittee hearing -- NASA's Venneri testifies at first-of-its-kind agency event

Imagine you worked for an organization that was considered so well positioned in the cutting-edge-technology arena -both geographically and in research terms con Valley, Bay Area, and other experts on the topic of "Emerging Technologies: Where is the Federal Government on the High Tech Curve?" the first to give testimony. Venneri postulated that, in every century since the Renaissance, "great advances in science and



Witnesses are sworn in prior to giving testimony before the subcommittee of the U.S. House of Representatives on Government Management, Information and Technology.

-- that it was chosen by an important subcommittee of the U.S. House of Representatives to host a field hearing on the topic of emerging technologies.

If you work at Ames Research Center,

On Monday April 24, just such a hearing was held at Ames in the Moffett Training and Conference Center ballroom. The venue was transformed for the occasion to resemble the court-room-like settings that we have all come to expect on C-SPAN and similar channels. But this wasn't Washington, it was right in our own back yard. And CNN, KCBS and other news media services were on hand to report the proceedings to a national audience.

Stephen Horn, Chairman of the Subcommittee on Government Management, Information, and Technology in the 106th Congress, called the meeting to order promptly at 11:45 a.m. The subcommittee's objective was to hear testimony from Sili-

Sam Venneri, Associate Administrator for Aero-Space Technology and Chief Technologist at NASA Headquarters, responds to questionning by the Congressional panel.

As Congressman Horn expressed it, "we are here today to take a glimpse into the future, to recognize that while the United States remains at the cutting edge of scientific research, other countries are advancing technologically. Still, it remains vital to the nation's economy and social fabric that [we] retain that lead," he said. Nine witnesses and a period of spirited questioning served to cast considerable light on the issues the subcommittee were investigating.

Samuel Venneri, Associate Administrator for Aero-Space Technology and Chief Technologist at NASA Headquarters, was technology have brought about dramatic changes in our lives." And so it will be in the 21st century, he argued.

being given during the field hearing.

"Three key emerging, interrelated technologies will provide NASA -- and the country -- with a new pathway to revolutionize our missions and the scientific and engineering systems that enable them: biotechnology, nanotechnology and information technology," Venneri said.

"Over the past decade, there have been tremendous scientific breakthroughs in the understanding of these technologies. And, it is only fitting that we discuss these technologies here since so much of it originated and prospers in California," he observed.

Venneri went on to provide an overview of how NASA plans to develop and employ these technologies in our missions. The secret, he argued, is not to be found in "chipping away atom by atom," but by proceeding in an entirely new direction that takes its cue from biology and lets us build, "atom by atom," cost-effective and reliable new devices." To build them, in Venneri's words, "conceptually, analytically and physically, from the atomic scale to the

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Awards & Events

Airships land at Ames for maintenance Recently, Moffett Field hosted a number for extended amounts of time, making them 1

Recently, Moffett Field hosted a number of non-rigid airships in Hangar II. These lighter-than-air crafts use a proprietary en-

photo by Mary Kenny

Airships undergo maintenance inside Hangar II at Ames.

velope design made of modern synthetic materials and are aerodynamically shaped. These are filled with helium gas, which is a natural fire extinguisher, and held at a very low pressure, about 1/15 psi. Once airborne, airships can remain nearly stationary for extended amounts of time, making them useful for extended missions, including testing and tracking atmospheric conditions.

Per FAA regulations, these airships must receive maintenance every six months along with testing of the integrity of the "envelope" on a regular basis. Because of their size requirements, the use of Hangar II for these activities is ideal, since this is only one of two hangars available on the West coast, the other being in Oregon.

The first airship to arrive here was an A-150 owned and operated by Airship Operations, Inc., and licensed to the Tommy Hilfiger

group. While they remained in Hangar II for two weeks, they changed their logo to represent their new client, Colleges.com. They also did minor maintenance work. The A-150 is the newer and larger of the airships currently in operation, spanning

165 feet in length, 55 feet in height and 46 feet in width. The volume of helium contained in the envelope is approximately 150,000 cubic feet, and ship runs twin variable pitch reversible propellers.

The second and third airships in Hangar

The second and third airships in Hangar II are owned and operated by The Lightship Group, a subsidiary of Virgin Atlantic. The Monster.com airship is an A-60; 132 feet long, 44 feet high and 37 feet wide with a cubic volume of 70,000 feet. "Monster" received a full maintenance along with redecaling, a new logo graphic on the envelope and fins. SANYO is an A-150. It received a full maintenance and installation of newly designed rudder fins while here at Moffett Field.

The next airship to undergo maintenance at Hangar II will be the Goodyear "Eagle" airship in May. This ship is approximately 202,240 cubic feet in volume and is currently based in Southern California.

Special thanks go out to the folks at Airfield Operations, Code Q and the fire marshal for their tireless activities in making this a successful relationship with a new client.

BY MARY KENNY

Acquisition awards presented to SOFIA team

On March 16, Deputy Center Director William E. Berry officiated at an Acquisition Improvement awards ceremony. NASA's Associate Administrator for Procurement (Code H) had recognized the Ames Stratospheric Observatory for Infrared Astronomy (SOFIA) mirror coating system procurement team for an "Acquisition Improvement Award." The team received a certificate and monetary award. This was one of only seven awards that Code H made during this six-month cycle.

The procurement contract was awarded on December 15, 1999 for \$829,000. It's purpose was for the design, fabrication, installation, and testing of the mirror coating system for the primary mirror on SOFIA. It is significant because the mirror coating system is integral to the operation of SOFIA, an airborne observatory consisting of a telescope carried by a specially configured Boeing 747-SP aircraft. SOFIA is a multinational program involving NASA and the DLR, Germany's Space Agency. The mirror coating system is used to re-coat the telescope's mirror after removal from the aircraft, an occurrence estimated to happen approximately four times per year for 25 years. The procurement team members are Rachel Khattab, Code JA; Curtis Laughlin, Code SFD; Raymond Schuler, Code FEF; Diane Wooden, Code SST; and Thomas Roellig, Code SSA.

The team was recognized for several

significant accomplishments. This procurement was the first midrange contract processed using NASA's innovative electronic procurement (EPRO) process. The team ity of the electronic proposals, allowed the team to make selection without discussions; to make award based upon the Initial Evaluation.



photo by Dominic Hart

Acquisition Improvement award recipients (from left to right): Dr. Thomas L. Roellig; Dr. Diane H. Wooden; Raymond F. Schuler; Rachel R. Khattab; and William E. Berry, Deputy Center Director. Not pictured Curtis Laughlin, the NASA representative at the SOFIA Aircraft Modification Facility in Waco, Texas.

used one of the EPRO tools (Entrust Digital Signature/Security) to allow proposal evaluations to be performed at an off-site location. The team's clearly defined evaluation value characteristics, coupled with the qual-

They completed the evaluation and selection in 29 days, from proposal receipt to award, no protests filed.

BY GENE MOSES

News from Ames & Around the Agency

NASA-sponsored local student teams win national robot games

Two San Francisco Bay Area student robot teams joined with a New Jersey team to win the FIRST national robotic games championship held Saturday, April 8 at Walt Disney World's EPCOT Center, Orlando, FL. The competition involved 268 robots from high schools across the nation.

Student-made robots formed "alliances" to lift large balls and put them into a container during the competition, the ninth annual event of its kind. The winning teams from Foothill High School, San José, CA, and Vintage High School, Napa, CA, both sponsored by Ames, joined with North Brunswick Township High School, North Brunswick, NJ, to win FIRST's annual contest.

"This victory marks an exceptional achievement in that no team west of the Mississippi has won this national event up until now," said Mark León of Ames. "The most remarkable point of this accomplishment is that the team from Foothill High School is composed of youths at risk," he said.

NASA worked cooperatively with a nonprofit group, "For Inspiration and Recognition of Science and Technology," (FIRST), of Manchester, NH, which organizes the contests

"I almost fainted when we won," said Alan Federman, an engineer who works at Ames, and who is a mentor for the San Jose team. "In the finals we were battered in the first match, losing 7 to 11. Our allies took it to the competition, shutting their scoring down due to incredible engineering by the New Brunswick students. Their robots' arm guarded or stole balls from our opponents," Federman reported.

Organizers say the overall goal of the robot games is to allow students to interact with engineers so that youths can see the connection between classroom instruction and the real world. Each year FIRST develops the competition and supplies "a problem" and a kit of parts to teams of students.

"It all came together with an extreme amount of teamwork from the three teams that formed our alliance," said science teacher Dave Lockhart, an advisor to the Napa team. "It was a phenomenal experience; goodstrategy and engineering played a big part," he said.

"It was incredibly exciting," said Jeff Ota, a former NASA engineer and a school board member of the East Side Union High School District that encompasses Foothill High School. Youths and their advisors designed and constructed their remote-control robots in six weeks. Advisors are often professional engineers from private industry, government and universities.

"Foothill is a continuation school with limited resources," Federman said. The school received \$6,000 from NASA Ames and additional funding from the school district, he explained. "The dozen kids on the team are mostly Mexican and Asian in heritage. A dedicated team of three engi-



First-place medal for the National Robot Championship games presented to two Ames-sponsored school teams.

neers, two from FROG Design, Sunnyvale, CA, and one from NASA (Raytheon) were assisted by three super teachers," Federman noted.

"The robot was assembled totally in a classroom," said Federman. "The only machine shop tool on campus is a drill press. Some off-site work was done at FROG Design where aluminum plate for wheels and the extruded aluminum members for the chassis were cut to size."

"This is beyond our wildest dreams," said Federman. "We were about 192nd in last year's nationals; we were the number ten seed in this year's competition," he explained.

"This year NASA is proud that we sponsored 108 teams nationwide," said León. "The endeavors in which the students engaged for this competition were truly impressive, and we expect that in the future some of these students will be the engineers and designers of our robotic planetary exploration program," he stated. FIRST was started in 1989 by inventor

Dean Kamen to persuade American youth that engineering and technology are exciting fields. Tom Dyson, ext. 4-6601 and Joseph Hering, ext. 4-2008, both of Ames, have more information about the robotics games.

Additional information can also be obtained at these Web sites:

http://robotics.nasa.gov/first.html, http://www.usfirst.org and http://robotics.nasa.gov/foothill

BY JOHN BLUCK

Ames hosts Congressional Subcommittee hearing

continued from front page macro scale."

"Over the next decade," Venneri argued, "we need to move aggressively to develop this technology vision for the 21st century and stimulate a new industrial base." And there is a precedent for the Federal Government playing a major role in such activity, he pointed out. "This mirrors the emergence of the microelectronics industry of the 1970s and the internet and e-commerce industry of the 1990s -- both of which began as government R&D investments," Venneri concluded.

Gilman Louie, President of In-Q-Tel, Inc., a Central Intelligence Agency non-profit corporation, addressed his company's efforts to ensure "that the CIA is able to take advantage of emerging technologies to achieve its vital mission." He said they are focusing on four problem areas in particular: safe and secure use of the internet, information security, distributed architectures, and knowledge management.

"We are using the engine of venture capital in order to identify technology with great promise for the Agency." he further

"We are using the engine of venture capital in order to identify technology with great promise for the Agency," he further stated. Finally, he said that it is essential to take risks. "If we are not prepared to be bold, we will never meet the critical information technology needs of our nation."

Other witnesses included Dr. Charles Shank, Director of the Lawrence Berkeley National Laboratory at the University of California; Dr. Steven Popper, Associate Director of the Science and Technology Policy Institute at the RAND Institute; Dr. Richard Williams, College of Engineering, California State University at Long Beach; Richard H. Davies, President and Chairman of the Western Disaster Center; the Honorable Pat Vorreiter, Mayor of the City of Sunnyvale; Dr. Susanne Huttner, Executive Director of the Industry-University Cooperative Research Program at the University of California; and Dr. Lea Rudee, Director of the Fellows Program for the California Council on Science and Technology, University of California, Riverside. All spoke with great passion about their own individual visions of this nation's technology needs for the 21st century.

Besides media coverage, the event was also webcast to students and other interested parties with the help of the Ames' Learning Technologies program. A videotape of the entire proceedings has been provided to NASA Television for rebroadcast at a later date.

BY DAVID MORSE

Activities & Events

Project ASTRO seeks NASA volunteers --help hook students on science!

Project ASTRO is currently seeking amateur or professional astronomers to work with science teachers in grades 4 to 9 during the 2000-2001 school year.

Project ASTRO is an innovative education program that brings astronomers to 4th through 9th grade science classrooms in the Bay Area.

Jill Anderson, third grade science teacher at Springer School, applied to be a Project ASTRO teacher in 1997. She trained at the Project ASTRO astronomy workshop and was partnered with Ames researcher Dr. Duane Carbon, who has been making visits to her class ever since. She raves: "Duane has been a fantastic resource for me, and a thrill for my students. I have really been able to 'hook' my students through this partnership."

It seems that lots of 'thrilling' and 'hooking' has been going on in nearby schools, as Duane is just one of the Ames employees visiting schools through Project ASTRO.

NASA employees Allan Meyer, George Tucker, Yvonne Pendelton, Scott Sandford, Alan Dunn and Joe Jordan are among the many traveling astronomers from Ames sparking excitement in science classrooms.

The occupations of Project ASTRO volunteers range from pilot to electronic technician to astrophysicist.

Researcher Scott Sandford, in the fifth year of his partnership explains, "I find that the students' enthusiasm frequently gets me 'pumped up' myself and I subsequently return to my work reenergized."

Another veteran ASTRO volunteer, Yvonne Pendelton adds, "My primary job is to be a NASA scientist, and I just don't have enough time or energy to devote to setting up programs like this. The good news is that you don't have to! All you have to do is step up to the challenge."

"The rewards awaiting you will keep you young at heart, and you will know that you are doing the right thing," she added. Representatives from the project will join Voyages Through Time, and Project SOFIA from Ames at the May 11 talk entitled: "Projects to Improve Science Teaching in Our Schools and What You Can Do To Help (without spending so much time that you can't do your real work)."

If you are concerned about your children's classrooms and would like to see what roles you can play, be sure to attend this seminar on May 11, 12 noon to 1 p.m., Building 245, Rm 215.

Project ASTRO application forms are available from:

allable from:
Project ASTRO
390 Ashton Avenue
San Francisco, CA 94112;
Phone: (415) 337-1100 ext. 101;
Email: astro@aspsky.org
Forms can also be downloaded from:
www.aspsky.org/astro/volunteer.html.

BY ERICA HOWSON

Ames researchers study how fungi affects forest types/regrowth

Tiny fungi that make forests possible are significantly affected by clear-cutting tree stands, perhaps altering forests and plant types that re-grow, according to a recent paper in the Canadian Journal of Botany.

The paper reports on ecological fungi research by NASA at Yellowstone National Park, WY, where scientists used a police technique, "DNA finger printing," to investigate biodiversity and the importance of human changes to ecosystems. An ecosystem is the combination of living things and raw materials, such as water, gases and minerals, that life uses in the environment. Clear-cutting refers to the practice of cutting a stand of trees in its entirety.

"If the fungi in ecosystems change in large areas of the world, then the kind of plant life could also change," said Dr. Ken Cullings, a scientist at Ames, who coauthored the paper with team member Kristin Byrd. "These fungal changes in the soil may begin to explain why it is more difficult for certain species of trees to regrow. Our results identied the need for further research to understand how fungi remained after clear-cutting," Cullings said.

"The fungi we study are related to the big mushrooms you see when walking through the forests," he said. "If you go to the market, you'll also see them; they are chanterelles and king bolete, expensive mushrooms that are also mycorrhizal fungi."

"Mycorrhizal fungi are important be-

cause, without them, trees could not get nutrients such as nitrogen and phosphorus from the soil," he said. "The fungi get carbon from tree roots in exchange for providing nitrogen and phosphorus to the trees."

If a tree does not have nitrogen, it cannot survive. Most plants on Earth, including trees in the tropical rainforests, form associations with fungi. "The things we are learning in Yellowstone can apply to ecosystems across the world," said Cullings.

The paper reports that the research team took soil cores at both undisturbed and clear-cut forest sites. Researchers found 48 species of ectomycorrhizal fungi in clear-cut areas, and 70 species in undisturbed Yellowstone forests. The research team also found 9 of the 14 most common "clear-cut" species in the undisturbed sites, but at a much lower abundance.

"We're using DNA finger printing to identify these different kinds of microbes," he said. "We work with a root hair the size of a pin head."

"Just like forensic detectives, we amplify the DNA by taking a gene, and we put it in a machine with the chemical building blocks of DNA."

Scientists use an enzyme, first discovered in a Yellowstone hot springs bacterium in the 1960s, to make several billion copies of each gene under study. Cullings was the first scientist to use this process to

categorize Yellowstone microbes.

"We measure biodiversity; and one way to do it is to measure the species that are present in the soil," Cullings said. "My group is counting microorganisms and what kinds live in Yellowstone's soil. We're looking at how clear-cutting, forest fires and other disturbances are affecting the microbe populations."

"We have found there is a big difference between how clear-cutting a forest affects microbes and how fires affect those populations," he said. "After a fire, or clearing of timber in a given area, the number of microbe species may be the same, but different kinds survive a fire versus survive clear-cutting."

Because some types of fungi may help certain tree varieties to survive, but not others, the kind of forest in the area may change after a fire or a clear-cut. The historic cycle of forest recovery may also change. During decades or even hundreds of years, many Yellowstone and Rocky Mountain forests change from lodge pole pines, to firs and spruce. Human-made disturbances, such as acid rain and changes in atmospheric gases (including carbon dioxide levels or damage to Earth's ozone layer), can also alter the repeating cycle of tree growth, Cullings' study suggests.

The Cullings paper appeared in the Canadian Journal of Botany, February 2000, Vol. 78, No. 2.

BY JOHN BLUCK



National Employee Health & Fitness Week

Ames celebrates National Employee Health and Fitness week

Safety, Health and Medical Services and the Health Sciences Library are pleased to announce the planned activities for National Employee Health and Fitness week May 15 to 19. Programs include the following:

On Monday, May 15, Stefanie S. Jeffrey, M.D., Chief of Breast Surgery, Stanford University School of Medicine will discuss "Breast Cancer Treatment in the New Millenium" from 2 p.m. to 3 p.m. in the main auditorium, Building N201.

On Tuesday, May 16, The annual "Spring Fun Run and Walk" will take place. The course will cover 2 miles. Walk it, waddle it, roll it, stroll it or run it. Just have fun doing it! The walk/run begins at 12 noon on DeFrance near Warner Road. Ribbons, refreshments and prizes will be handed out at the finish line near the Ames Café. Certificates will be given to winners in both walking and running categories. Registration is \$2 and t-shirts may be purchased prior to the run at the Fitness Center. You may pre-register with any of the event coordinators or at the Fitness Center. Registration will also take place at the starting line on race day. No rollerblades please.

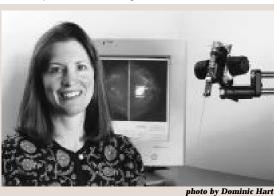
Contact Nancy Dunagan at ext. 4-5804 for additional information.

On Wednesday, May 17, at 12 p.m., Ames will kick-off a skin

cancer prevention rogram as one more health facet to reduce employee illnesses and the damaging effects related to skin cancer. A film will be shown featuring NASA Astronaut Captain Jeffrey Ashby. Information from many different resources will be available for all attendees. Representatives from the Ames Health Unit will be available to answer questions and provide literature. Please join us in the main auditorium, Building N201on

Wednesday, May 17 at 12 noon.

"Is Your Number Up?" will be featured on Thursday, May 18. Free blood pressure screenings will be given by the Health Unit staff in conjunction with the Health Sciences Library. Drop by the Health Sciences Library from 11 a.m. to 1 p.m. for a free screening and valuable information on



Dr. Stefanie Jeffrey, M.D., Chief of Breast Surgery at Stanford University School of Medicine, will speak on breast cancer treatment on May 15, at 2 p.m. in the main auditorium, Building N201.

blood pressure and keeping your number in range.

Contact the Health Unit at ext. 4-5287, Bldg. 215 if you have any questions.

BY LIESEL SHORT

Skin cancer prevention program kick-off at Ames

On Wednesday, May 17 at 12 p.m., Ames will kick off a Skin Cancer Prevention program as one more health facet to reduce



Astronaut Captain Jeffrey Ashby, pictured here, will be featured in a film presentation on skin cancer prevention to be shown on May 17 at 12 noon in the main auditorium, Building N201.

employee illnesses and the damaging effects related to skin cancer. This initiative, begun by NASA Administrator Dan Goldin, was created in response to his concern for

employees increased risk of excessive and prolonged sun exposure due to the location of many NASA centers in the Sunbelt.

The "Solar Safe" campaign focuses on reducing risks, early detection and health education about skin cancer. It will include program components, such as personal UV cards to quantify exposure, screenings, educational material and appropriate protective measures.

A film will be shown featuring NASA astronaut Captain Jeffrey Ashby, who lost his wife to skin cancer and made a special guest appearance and presentation recently at KSC. Dermatologists representing the American Academy of Dermatology, Dr. Richard Granstein; Cornell University Medical Center, Dr. Shelly Sekula; Baylor College of Medicine, and Eliza Perry, RN, Chairman of the Board for the American Cancer Society are also guest speakers. Topics covered will include risk factors, pathogenesis, diagnosis, treatment and prevention. Information from many different resources will be available for all attendees.

One in five Americans will develop some form of skin cancer during their life-

times. Vigilance against skin cancer depends on what dermatologists call the ABCD's of skin spots: assymetrical shapes, boundaries that are irregular, colors that vary and a diameter of 6 millimeters or greater. The most important element in skin safety is regular self-examination using the "ABCD" guide described. Because melanoma is fatal if not caught early, even an annual examination by a doctor might not catch a problem in time.

Representatives from the Ames Health Unit will be available to answer questions and provide literature. The film will be shown as part of Ames celebration of "National Employee Health and Fitness Week". Join us in main auditorium, Building N201 on Wednesday, May 17 at 12 noon for this informational kick-off event and learn how you can protect yourself from this very preventable disease.

BY LIESEL SHORT

On-site Events & Classes

Earth Day event is informative

Ames employees turned out for the Earth Day Symposium and Exposition on April 20. The goal of the event was to encourage the use of renewable forms of energy to power our homes, to inform Ames employees of

Charging rather than fueling. A Chevy Blazer that was converted from gas to electric.

recycled content products that are available through GSA, and to promote use of non-polluting transportation technology.

Many people felt that the morning session "New Energy for a New Era" was very informative. The speakers were knowledgeable and were very excited about energy deregulation. They provided useful information from a consumer standpoint. Several session attendees became convinced to change to a green-energy provider. Attendees found it helpful having the energy providers there who were able to answer questions about the differences in billing structures.

Center personnel who attended "Technologies for a Better World" walked away with the knowledge that pollution preven-



The ETC, a foldable bike with a battery pack, is taken for a ride.

tion does pay. Ames saves approximately \$1 million through the innovative technologies in use here.

Many people found the exhibits informative. Most people enjoyed seeing the electric vehicles. Many people even took



General Motors' second-generation electric vehicle has an improved battery which enhances range.

the opportunity to ride an electric bike. It is surprising how easy they are to operate.

Thirty persons made a connection with the Rides for Bay Area Commuters. Hopefully, their commutes will be more enjoyable in the future.

Two hundred and twenty-three persons participated in the bike giveaway by using some form of alternative transportation the week prior to the event. Jeanette Johnston, Code JIL, won the bike donated by the Ames Exchange. Johnston uses mass transit to get to work.

A pilot project to make electricity from the sun was announced. Steve Frankel, an engineer spearheading the project, flicked on a light switch powered by a photovoltaic cell. The demonstration solar-electric plant at Ames is to be completed by late summer; the plant will be on the roof of Bldg. 245. "This solar-electric system will reduce global warming by reducing green-house-gas emission in the local area," Frankel said.

The Ames Environmental Services Office will host brown bag lunches throughout the year as a continuation to this year's Strive to Sustain - Earth Day 2000 event.

BY LINDA VRABEL

Exchange pool goes to summer schedule

The Ames Exchange swimming pool is scheduling summer recreational swimming, beginning Saturday, May 27.

The pool has many programs to offer this year. The NASA Master's Swim Club meets Monday to Friday from 6 a.m. to 8 a.m. Lap Swimming is from 10 a.m. to 1 p.m. Open recreational swimming is from 1 p.m. to 5:30 p.m., seven days a week.

Swimming passes are sold at the swimming pool, building 109 located on the corner of Wescoat and Bailey Roads.

Beginning June 19, the Exchange is offering the following American Red Cross swimming lessons: stroke refinement, stroke development, stroke readiness, primary skills and water exploration. Each class lasts two weeks, running Monday through Thursday, and costs \$45.

For more information, call Brandy Bell at ext. 3-8025.

Ames offers theater tickets for sale

The Ames Exchange will be offering tickets for the following shows:

• WIT, Starring Judith Light, Friday, May 19. The Curran Theater, at 8 p.m.

Winner of the 1999 Pulitzer prize for drama, this is an intelligent, funny, heartbreaking study of the human spirit. It may well be one of the most gratifying theatrical experiences of a lifetime. Mezzanine seating, \$37.50 each

Disney's Beauty and the Beast, Thursday, June 8, The Orpheum Theater, at 8 p.m.

A prince and his entire housefold exist under a spell until the true power of love releases them. Disney imagination teams with Broadway special-effects genius in a way that leaves audiences breathless. Mezzanine seating, \$42 each

Tickets are available on a first-come, first-serve basis, at the Tickets and Tours office, Building 19, Rm. 1011, Monday to Friday, 10 a.m. to 2 p.m. Tickets are available only for the date and show time listed. For more information, call Jodi Neal at ext. 4-0818 or Ticket and Tours at ext. 4-6873.

Calendar & Classifieds

Event Calendar

Model HO/HOn3 Railroad Train Club at Moffett Field invites train buffs to visit is join the club in Bldg. 126, across from the south end of Hangar One. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H)

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung at ext. 4-2875 or Lich Tran at ext. 4-5997.

Ames Ballroom Dance Club, Ames Ballroom Dance Club. Tuesdays: Rumba 4/4, 4/11, 4/18, Salsa 4/25, 5/2, 5/9, Samba 5/16, 5/23, 5/30, 6/6. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Ames Child Care Center Board of Directors Mtg, Every other Thursday (check Web site for meeting dates), 12 noon to 2 p.m., N269, Rm. 201. POC: David Korsmeyer, ext. 4-3114. Web site: http://accc.arc.nasa.gov

Ames Contractor Council Mtg, May 3, 11 a.m., N-200 Comm. Rm. POC: David Lawrence at ext. 4-6434.

Environmental, Health and Safety Monthly Information Forum, May 4, 8:30 a.m. to 9:30 a.m., Bldg. 19/Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, May 4, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Mtg, May 4, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Nat'l Association of Retired Federal Employees, (NARFE), San Jose Chapter #50, Mtg, May 5, at Harry's Hofbrau, 390 Saratoga Av., S.J., Prog. and bus. mtg. follow lunch at 11 am. POC: Mr. Rod Perry (650) 967-9418 or NARFE 1-800-627-3394.

Ames Sailing Club Mtg, May 11, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

Professional Administrative Council (PAC) Mtg., May 11, 10:30-11:30 a.m., Bldg 233A, Rm. 172. POC: Leslie Jacob, ext. 4-5059.

NFFE Local 997 Union General Mtg, May 17, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Multicultural Leadership Council Mtg, May 17, 11:30 a.m. to 1 p.m., Galileo Rm/Ames Café. POC: Sheila Johnson, ext. 4-5054 or David Morse, ext. 4-4724.

Ames Amateur Radio Club, May 18, 12 noon, N-260/Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

Ames Asian American Pacific Islander Advisory Group Mtg, May 18, 11:30 a.m. to 1 p.m., N-237/Rm. 101. POC: Daryl Wong, ext. 4-6889 or Margaret Salas, ext. 4-6755.

Native American Advisory Committee Mtg, May 23, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will runon space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads. Housing

For sale by owner: \$549K, small horse ranch near Watsonville. Royal oaks, California/scenic area. 3 acres w/ trees & lots of open space. 3 bd/2 ba home/family rm w/ fireplace. Front/rear decks w/hot tub rm. 2 car garage w/laundry rm & storage rm. Barn, tack rm, corrals, workshop/electricity. Property fenced & outside lighting. Ron (408) 736-2150. Lv msg or call (831) 722-0130.

Housemate wanted to rent room in San Jose-Berryessa area home, two miles from Great Mall. Full privileges. Tenant should be clean/orderly, N/S, no pets. \$500/mo plus 1/2 utilities. Owen (408) 945-8864

Sunnyvale condo for sale by owner. Spacious 1bd/1ba w/den/bonus room. Walk-in storage room, large indoor laundry w/full size W/D. Attached, enclosed garage. Small yard. Beautiful quiet complex. Easy H101 access, 7 mins to Ames. Central A/C, fireplace, pool. 3 years old. Open house May 13/14, 10 a.m. to 4 p.m. \$260K. Call (408) 732-8605.

For rent: 2 bd/2 ba condominium in sunnyvale, 3 miles from Ames. \$1,950/mo. Call (408) 773-1726.

Housing needed: Researcher from Brazil working at Ames for a year needs housing. Apartment, townhouse, or house with 2+ bd for family of 4, May 1, 2000 through April 30, 2001. Call (650) 960-9787.

Housing needed: College professor visiting Ames for summer research needs temporary lodging. Apartment, townhouse, or house with 2+ BR for family of 3, June 1 to approx. August 20. Willing to pay rent while housesitting, will happily take care of plants, pets, yard. Call (650) 903-0925.

Housing needed: Female scientist visiting Ames for sommer research needs temporary lodging. Furnished room or apartment from May 15 to the end of August. Phone: +49 172 9950132 or email: petra.rettberg@dlr.de

Transportation

'70 Ford Econoline Deluxe camper van pop-up top with screens. New tires, brakes, front end linkage, heater core. Propane stove, water/electrical hookups, CB radio, potty. 79,000 orig. mls, runs excellent. \$4,250. Patrick (831) 462-1184.

'72 VW Bug, 65K, runs good, blue paint. Asking \$850. Call (408) 873-5706.

'83 Suzuki Katana 650, runs great, current registration, \$600. Call (408) 260-1180.

'89 Suzuki Savage 650cc, cruiser, bought out of crate 1990 - great starter bike, dik blu, belt-driven, 1-lunger, ca. 2K mi, clean/never dumped. asking \$2,000 or B/O. Spartan leathers (midnight/cobalt/white) tailored to women's size 3 - worn maybe 5 times. Matching boots, gloves, helmet. All cost ca. \$800, asking \$500 or B/O. Upgrading everything. Therese (925) 570-0057 cell.

'92 Mercury Sable station wagon; Excellent condition, fully loaded, 69K mls, seats 8 and very well maintained. \$5,700. Harry Swenson (650) 368-8979.

'93 Honda Accord EX, green exterior/tan Interior, 4 door, automatic, cruise control, AM/FM stereo cassette, power sun roof, power windows, newer brakes/tires. All major records, faithfully maintained, no major scratches/dents. No interior damage, non-smoker. 93K mls. \$9,700. Call (408) 263-2109.

'98 Taurus 4-dr sedan, automatic, A/C, power windows, alarm/lock, \$13K. Great condition with Less than 16K miles! Larry or Teri, (408) 266-2535, or email piercepack@hotmail.com

Miscellaneous

Dog needs a home: A homeless dog is available for adoption. Lab and Ridgeback mix, 3 years old, spayed female, 50 pounds, short tan hair, very healthy, has all shots. Call (831) 461-9223.

Scuba Gear for sale: 3000 psi Aluminum Tank, Scubapro Regulator, Octopus, gages, buoyancy compensater, bare 7mm wet suit size large, fins, underwater camera box. Offer. George (408) 245-8740 or e-mail at gdgr@earthlink.net

Moving sale: Solid oak furniture - Twin bed with 3 large drawers underneath (includes matress) \$150; Large chest of drawers w/5 lingerie drawers on side \$275; Two large wall units \$100 each; and small apartment-size freezer (almost new) \$100. Will accept best offer. Call (408) 371-9680 after 6 p.m. or leave message.

Happy Mothers Day! Mahogany Ranch mink coat. I. Magnin's. Appr. + insured for \$7,500. Sell \$1,200 or B/O. Call (650) 968-8650.

Apple Performa PowerMac 6200 CD, 40MB RAM, 1GB Hard Drive, CD, Internal modem, 15" color monitor. Price reduced: \$500. Ron (925) 606-0515 or Pepperron@yahoo.com.

Child's removable bicycle seat and rack. Two year old "Rhode Gear" removable child's seat in excellent condition. Seat has three point seatbelt and cross bar and comes with rack that mounts on rear of mountain bike. Pd \$90 new. Will sell for \$40. Jeff (707)427-3819.

Wanted: one Kitten; Sunnyvale, California; Looking for a new kitten to join our family of three adult humans and two (very friendly) adult cats. We prefer a female. We prefer some short hair variety, esp. Tabby. No ferals please. Email: danielc@danielc.com

2~rear fenders for '73 - '74 VW Super Beetle \$70 for both or B/O. Call (408) 260-1180.

Pair of 49er tickets, sec. 62, \$50 each: 9/10 Carolina, 10/1 Ariz., 10/8 Raiders (\$70 each), 10/15 GB(\$60 each) 10/29 St Louis, 11/12 KC, 11/19 Atl, 12/10 NO, 12/17 Chicago. Jon (408) 985-7323 H. Sega game gear w/3 games and carrying case. \$75. Eilene (408) 979-9107.

Sailboat, 14' fiberglas "Force 5," single 91 sqft. sail. Basically a Cadillac Laser. Good condition. \$800 includes trailer. Warren (408) 246-3627 or email at: NASAPLT@aol.com

Baby furniture: Fisher-Price high chair; Even flo Happy Camper travel crib and playyard; Fisher Price car seat. All in excellent condition. \$35 eaor \$90 for all 3. Sydney or Minot. Call (650) 728-5219 after 5 p.m.

Ames radio information

for employees

1700KHz AM radio--information radio announcements for Ames employees during emergencies

Vacation rental

Lake Tahoe-Squaw Valley twnhouse, 3bd/2ba, view of slopes, close to lifts. Wkend \$470, midwk \$175 night. Includes linens, firewood. Call (650) 968-4155 or email: DBMcKellar@aol.com

Carpool

Looking for carpool partners to share driving/riding from East Bay (Oakland-Hayward area) to Moffett Field. If interested, email me at mzirkle-yoshida@mail.arc.nasa.gov

Lost & Found

Moffett Field Lost and Found may be reached at ext. 4-5416 at any time. Residents and employees at Ames may also use Internet browser at: http://ccf.arc.nasa.gov/codejp/pages/lostFound.html to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field security police investigations section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Baseball Fans-mark your calendars!

The Ames Exchange is hosting a day at the ballpark! Come watch the big rivalry game between the Oakland A's and the San Francisco Giants.

The game is Saturday June 3 at 1:05 p.m. at the Oakland stadium. The Ames Exchange will be sponsoring a tailgate party with hot dogs, chips and sodas before the

with hot dogs, chips and sodas before the game, starting at 11:00 a.m.
Tickets for the game and tailgate are only \$5 and are available at the Tickets and Tours Office. Building 19, Rm. 1011. For more information, call ext. 4-6873 or Jodi Neal at ext. 4-0818.

Events & Miscellaneous

Speakers Bureau needs your expertise!

The NASA Speakers Bureau Program schedules volunteer employees from Ames to give lectures and presentations at educational institutions, business organizations service clubs and professional and technical societies. The program has been successful in reaching out to the Silicon Valley community and other states, informing the public of NASA's contributions to research, technology development and science.

As our valley continues to develop, requests are coming in weekly for NASA employees to inform the community of NASA's contributions to the nation.

The Speakers Bureau Program is looking for NASA employees and/or contractors to be a part of the program. If you enjoy speaking to people about your career and would love to share your expertise, call the Speakers Bureau program and volunteer. Contact Sheila Johnson at ext. 4-5054 or contact the author at ext. 4-4034.

BY VALONNE FINNIE

Tickets on sale

The Ames Exchange is selling tickets for the following amusement parks: Disneyland, Universal Studios, Magic Mountain, Six Flags Marine World, Knott's Berry Farm, Monterey Bay Aquariam and Paramount's Great America. Call Tickets & Tours at ext. 4-6873, or ext. 4-0818 for more information.

National Day of Prayer Observance

On May 4, at 11:30 a.m. to noon, Ames staff are invited to gather at the field east of Building N245, Pioneer Avenue and N. Warehouse Road. Come and pray together for our community, our nation and our world. POC: Don Durston, ext. 4-1515.

Exchange offers NASA night with the San José SaberCats

The Ames Exchange is proud to offer tickets for this May 12, 7:30 p.m. event at the San José Arena. Come watch the San José SaberCats battle the Oklahoma Wranglers in the 50-yard indoor war called Arena League Football.

This exciting game of football is played indoors with lots of fireworks, music, fan participation and half-time shows.

Tickets are limited, on a first-come-first-serve. Tickets can be purchased at Tickets & Tours, Building 19, Room 1011. Hours are 10 a.m. to 2 p.m., Monday to Friday. Call ext. 4-6873 or ext. 4-0818 for more information.

Computer museum center unveiling, May 3

Chronicling the rise of technology, the Computer Museum History Center will unveil its new look and direction on May 3.

With a glance back at the building blocks of computer science and a firm grip on the developing future, this event embraces the history that defines Silicon Valley. You won't want to miss it.

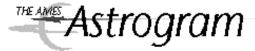
Join us in the collection space, Building 126, at Moffett Field at 6:00 p.m. on Wednesday, May 3.

More details to come soon, but you'll want to be sure to save the date!

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by email to: astrogram@mail.arc.nasa.gov on or before the deadline.

Deadline	Publication
Tues, May 2	Mon, May 15
Tues, May 16	Mon, May 29
Tues, May 30	Mon, Jun 12
Tues, Jun 13	Mon, Jun 26
Tues, Jun 27	Mon, Jul 10
Tues, Jul 11	Mon, Jul 10
Tues, Jul 11	Mon, Jul 24



National Aeronautics and Space Administration

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